Introduction

Welcome to the June 2012 ***Binocular Sky*** Newsletter . The intention of this monthly offering is to highlight some of the binocular targets for the coming month. It is primarily targeted at observers in the UK, but should have some usefulness for observers anywhere north of Latitude 30°N. For this Newsletter to be a useful tool, it needs to have the information that **YOU** want in it; therefore please do not be shy about making requests – if I can accommodate your wishes, I shall do so. There is a printer-friendly version: http://binocularsky.com/newsletter/201206p.pdf

The Deep Sky (Yellow text is hyperlinked to charts and more information.)

Visible low in the North are NGC 457 (The Owl Cluster) and NGC 633 in Cassiopeia and the Perseus Double Cluster. The finest and best-placed open cluster available this month is April's "object of the month", Melotte 111, the cluster that gives Coma its name. More open Clusters are becoming visible in the southeastern sky as Ophiuchus rises. These include Melotte 186, NGC 6633 and IC 4665, all of which are easily visible in 50mm binoculars.

Open (also called 'Galactic') Clusters are loosely packed groups of stars that are gravitationally bound together; they may contain from a few dozen to a few thousand stars which recently formed in the galactic disk.

The Deep Sky (contd)

While you are in the region of Ophiuchus, see if you can find Barnard's Star. This has the largest known proper motion of any star. (***Proper motion*** is motion with respect to the celestial sphere.) Although it is visible in 50mm binoculars from a dark site, it is considerably easier in larger glasses and I recommend a minimum of 70mm.

In June, we are able to look out of the plane of the Galaxy during the evening. This makes more globular clusters and galaxies available for observation. Look out for the two galaxy trios in Leo (M95/96/105 and M65/66/NGC3628) which are now moving into the western sky, and *Markarian's Chain* in Coma Berenices, which is very well placed as we enter astronomical twilight. If you have a big binocular, also observe the edge-on NGC4565 (*Berenice's Hair Clip*), which is next to Melotte 111. Also very well placed this month are M81 (*Bode's Nebula*) and M82 (*The Cigar Galaxy)*, both of which are easy in a 50mm binocular. These can be used as a good demonstration of averted vision: if you have them both I the same field of view, you may see that the core of M81 becomes more apparent if you look at M82. If you have good skies, try M51 (*The Whirlpool*) and M101 which, although it is a large object, is very difficult owing to its low surface brightness.

The Canes Venatici globular cluster M3, is a good one to start with during an June evening's observing. Later in the evening, the two Hercules globulars, M92 and the very impressive, and very easy to find, M13 are at a better altitude for observation. Although M13 is clearly larger than M3, it is easier to resolve the outer stars of the latter one, which is why I one reason that I have nominated it as object of the month. Also visible this month is this month's “object of the month”, M5 in Serpens, which is one of the largest globular clusters known, being 165 light years in diameter. It's apparent size is nearly as large as a Full Moon.

The Deep Sky (contd)

Globular clusters are tightly-bound, and hence approximately spherical, clusters of tens, or even hundreds, of thousands of stars that orbit in a halo around almost all large galaxies that have been observed. They are important for two reasons: Firstly, they contain some of the oldest stars in the galaxy, so studying them helps us understand the evolution of stars. Secondly, they are useful as “standard candles” in establishing a distance scale of the Universe, based on the assumption that the brightest stars in any globular cluster will be approximately the same brightness and that the brightest globulars in a galaxy will be approximately the same brightness.

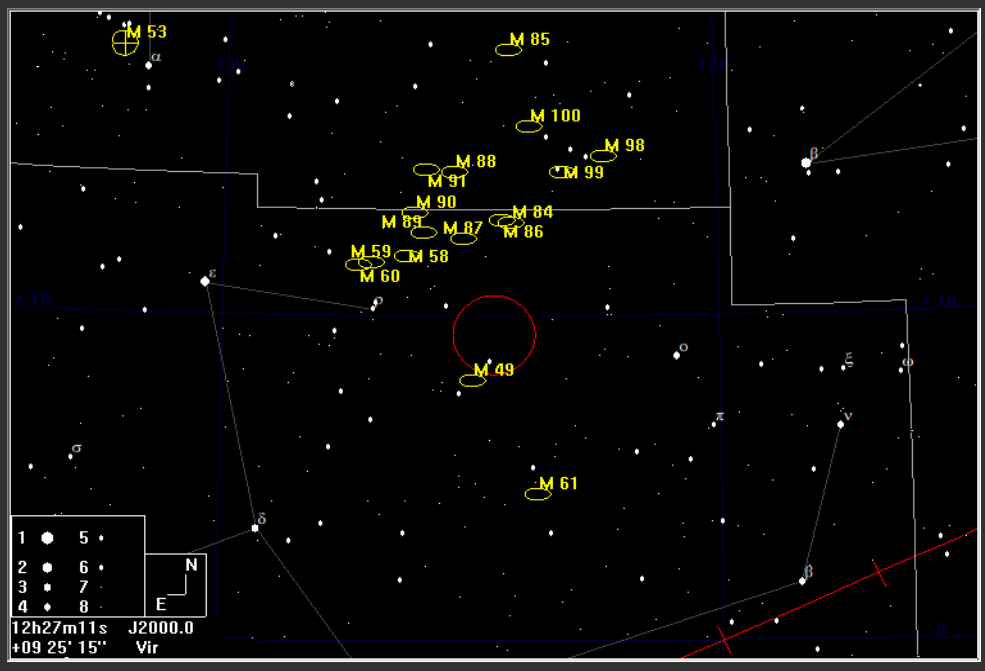
If you have binoculars of at least 100mm aperture, see if you can find and identify NGC 6572, a planetary nebula in Ophiuchus. Even in large glasses it looks stellar, but it has the distinction of being possibly the greenest object in the sky.

Planetary Nebulae are short-lived (a few tens of thousands of years) masses of gas and plasma that result from the death of some stars. They have nothing to do with planets, but get their name from the fact that, in early telescopes, they had the appearance of giant planets.

For an interactive maps of Deep Sky Objects visible from 51 °N, please visit: http://binocularsky.com/map_select.php

Transient Objects

There is a 12th magnitude supernova in NGC4424, which is just south of Markarian's Chain (R.A. = 12h27m12s.83, Decl. = +09°25'13".2). It is visible in 100mm binoculars. The red circle is 2.5° in diameter:



The Solar System

Planets

Venus appears to dive towards the Sun at the beginning of the month, and transits the surface on the 6th. This will be visible at dawn. If you wish to observe this, you need a spot with a good NE horizon. Also, please ensure you observe the Sun safely. If you are unsure how to do so, please see my YouTube video on the subject: http://www.youtube.com/watch?v=eDZ_nDR1BYk .

Meteor Showers

The only meteor shower this month is the June Boötids, which ranges from the 22nd until July 2nd, peaking on the 27th . This is usually a very weak shower, with only one or two meteors visible every hour, but there have been outbursts with Zenithal Hourly Rates of 100 or more. These meteors are dust particles from the tail of Comet Pons-Winnecke. As these particles enter the atmosphere, they compress and heat the air in front of them. This heat causes the surface of the particle to ablate and ionise. Binoculars are useful for observing the persistence of these ionisation trains that form the streak in the sky which is what we observe as a “shooting star.

The Moon

Jun 04	Full Moon
Jun 11	Last Quarter
Jun 19	New Moon
Jun 27	First Quarter

Wishing you Clear Dark Skies,

Steve Tonkin for ***The Binocular Sky***

Acknowledgments:

The charts in this newsletter were prepared with Guide v9.0 from http://projectpluto.com